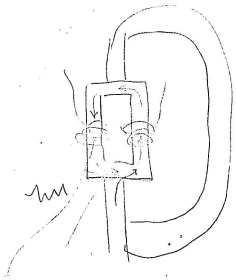
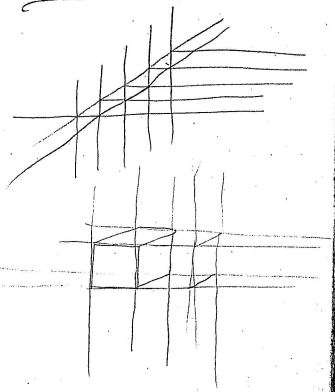
Notebook, N-87-00-00.3

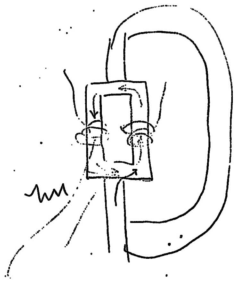
This undated notebook was probably begun in 1887, but it may have been used as early as 1886. All entries are by Edison. Included is a proposed plan for the West Orange laboratory and a list of schemes to be worked there. There are also several notes and drawings about telephone experiments, a few generator drawings, and notes on miscellaneous electrical and chemical experiments. At the beginning of the book is an itinerary for a trip by Edison to Philadelphia, Baltimore, and Washington. The last several pages contain addresses of individuals and firms in Continental Europe. The book has been used in both directions. The first 25 pages are numbered. Approximately 70 pages have been used.



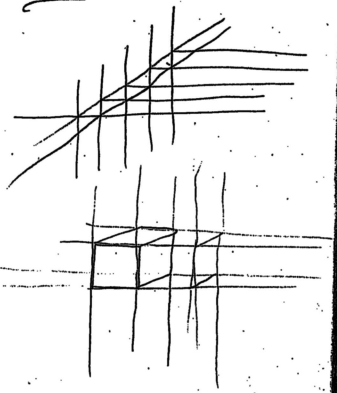
Theory:



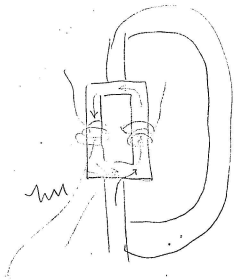
Magnetism tends to



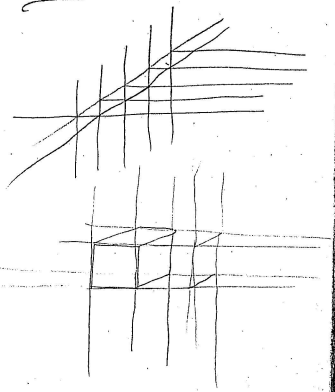
Theory:



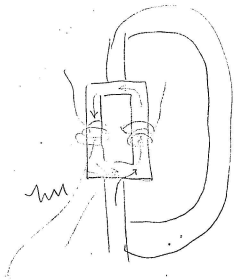
Magnetism tends to



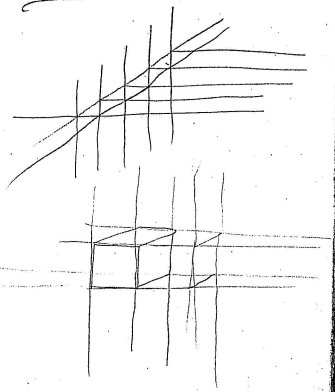
Theory:



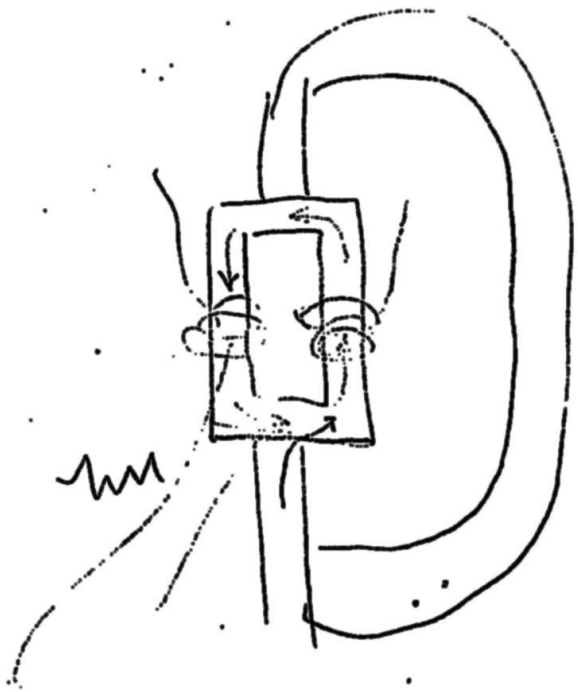
Magnetism tends to



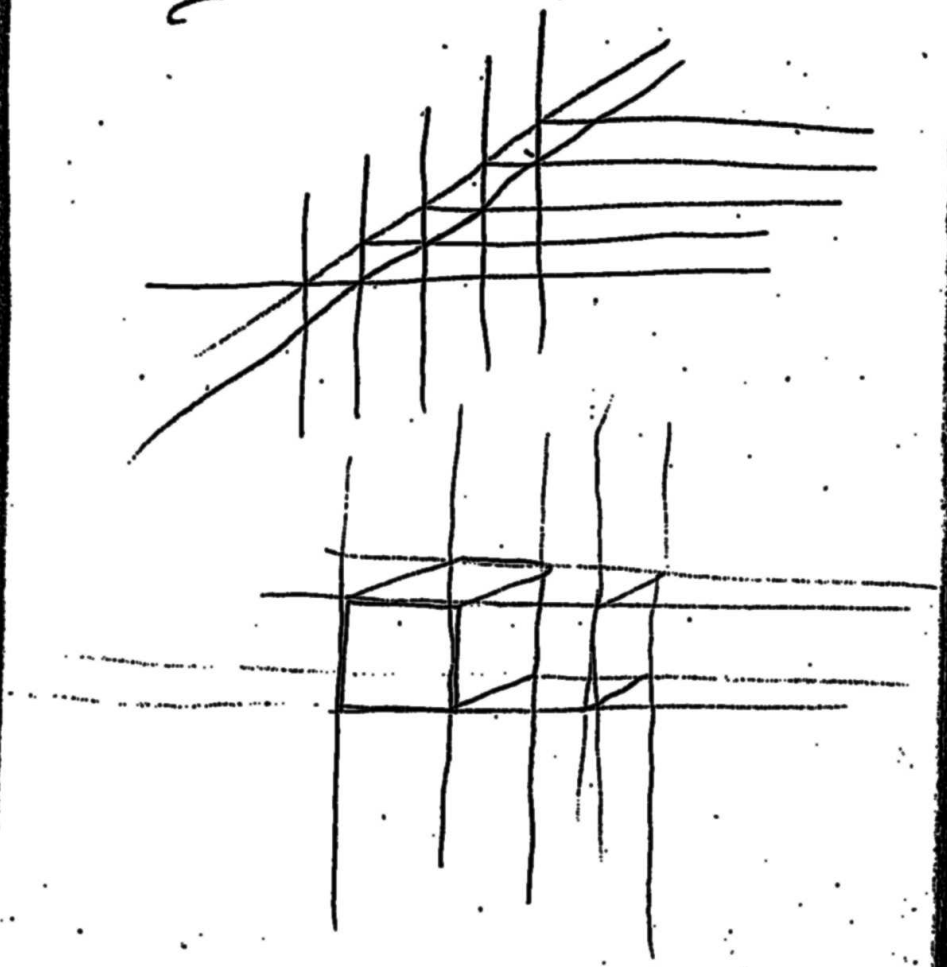
Theory:



Magnetism tends to



Theory:



Magnetism tends to

Pages 1-6 25 numbered by P Klimkow 8/1/19
N-(87-00-00.3)

1

Thursday phea - ~~all night~~.
Friday ~~Sat~~ all day + 6
wash at night all night
wash 5 at day -
Saturday pm home
on B.H.O.

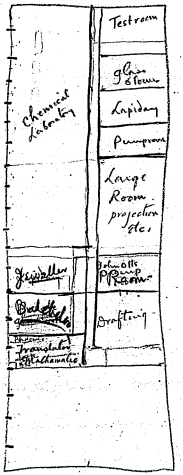
Sunday

Monday
75
4.30

Thursday Phila + Balto
Balto — Friday Balto +
Theatre Washn —

Wednesday Phila + Balto
that night +

Wednesday
Wednesday


Test room
glass blown
Lapidary
Pumproom
Chemical Laboratory
Large Room projection etc.
Jewellery
Drafting

List of schemes to work at in new Laboratory —

Heating metals by current for mechanics operation —

Extraction fibre —

Ore Seperator —

Industrial process for mfg Electro Chemically by Electrolysis & dynamo machine —

Aluminum —

Tanning —

Magno thermic motor & Battery

Magnetic bridge —

Lipmann mercury meter.

Ozone for bleaching — Nitric acid — ammonia etc by Hourgean apparatus big silent discharge machine run by

power - alternating etc
Currents -

Application in telegraphy telephony
Electric light & instruments
of pressure of effect of
heat in alternating magnetism
of Nickel Cobalt & iron

ditto that magnetism
diminishes the resistance
of iron & the magnetic metals
See of it effects iron salts
with unpolarizable Electrodes

Malograph to be worked
up in all possible applications

Artificial Silk

Moulding Compounds for use in the arts –

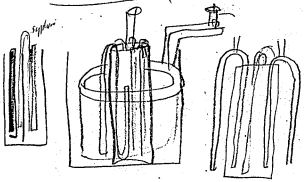
infusible flexible insulation,

Amplifiers –

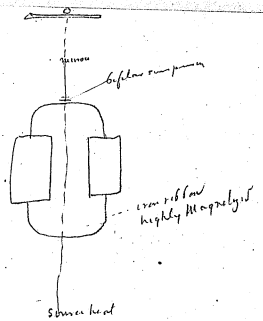
Watts Dic. 3rd Sup. Pt 1 – p 708 –
Resistance increases or diminish by heat of Galleria. Cooling Daniel call to –10 Cent, Res increased 25 times. ~~heat~~ Carbon coil at –15° C 20 times + Emf diminished $\frac{1}{10}$ — hence try both in sealed tubes with pressure value to 6 Pow at 350 – + heat + get internal Res.
also a table to be published of the increase of conductivity of a Daniel Bunsen + other batteries by rise of temperature also

Change in Emf - on commercial Cells & on pure Zinc & chemical Cells - starting 3 or 4 degs from Freezing point.

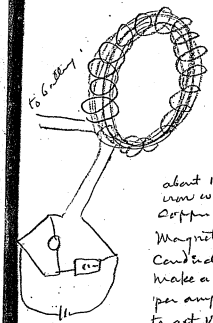
An investigation as to the change of resistance in batteries due to increase in size of positive & neg Electrodes so as to fully show which electrode diminishes internal Resistance the greatest by increase of size.



Set of syphon glass tubes to replace porous cup & by this means prevent diffusion.



Closed magnetic circuit $\frac{1}{1000}$ pure iron or $\frac{1}{5000}$ of possible short magnetized needle on bifilar suspension: in front of spot where heat beam is focussed – the heat increasing diamagnetic permeability at that spot + making free poles –



about 1000 ohms fine insulated iron wire permeated with copper wire + remagnetized
Magnetization decreases
Conductivity of iron (hungry metal)
make a table of resis per amper spire etc - to get value of this phenomenon for practical application —

Watts 3rd Sup pt 1 p 719 - states res diminishes at square current but gives no data for starting point of value or amount of change with given current.

Collect up literature of effect light on Selenium + see if it has ever been arranged in Vacuo so as to get constancy of condition of not ~~Make~~ a Vacuum Cell + experiment,

Read up see if glass has ever been pressed hot through dies if not ascertain if it can be pressed out through long flat die to make window glass same as lead pipe is made —

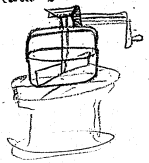
Accurate & scientifically
Conducted Experiments on
the exact melting points
of metallic filaments in
Vacuo arranged like a Carbon
fil & in Volt ampere apparatus
to read continuous as heat
rises — also McLeod gauge
to measure gas coming out
due to heating —

Prepare about 1@2 lbs of every
Solubble Carbonable material
for dipping — its probable that
every material will on Carbonization
give a different amount of
cp hp rd 17 175 cphp —
prepare Asphaltum way up as far as
Can go without Carbonization
by dissolving that black residual

Coke from Oil Co's retort in paraffine or other high boiling point coal tar product -

~~Make some Carbon monosulphide~~ -
~~Use graphitic acid - do so quick~~ -

Take common asphalt, melt and stir for several days until it becomes impossible to stir it & not burn it more than possible. a hand stirrer should be rigged up



Then pour or scrape it out to cool - take a portion say

Exactly one lb powder finely 100 mesh then act on by following menstrua to dissolve out the various compounds –

Alcohol, — then Ether — then mixture Alcohol + Ether, then Ammonia, ~~Then Water~~, Then gasolene, then Chloroform – then several of the Essential oils, then ~~Bisulphide~~, ~~Bromide~~ Water Strong hot alkali – strong HCl –

Then Naptha, Bisulphide Carbon Benzol. Spirits turpentine.

Use a small portion of the powder (not the lb) in test tube for a preliminary trial. as I want to reserve the major part of the lb for the remaining + best solvents, object a final Bitumen that neither saponifies or melts

Take another lb of Asphaltene, dissolve the whole in Benzol & allow it to settle perfectly then distil Benzol off — ~~dos~~ this will eliminate the Ash & inorganic materials as well as solid Carbon —

Then act on residue with every solvent which does not appear to go for the general bulk of the residue,

Try boiling Vasalene, paraffine &c

Make Solution of amber in any Solvent that can be distilled off — as best general Solvent,

Then after distillation treat with the various inferior Solvents to eliminate More fusible resins,

Same with Zanzibar Copal

Try Caoutchouc in Benzine Chloroform or best Solvent, dry

Varnishes -

Powdered Copal gradually added to sulphuric Ether in a flask with Cork shaken at times for 24 hours, 5 pts Copal 2 pts Ether - used for repairing the glazing of enamels -

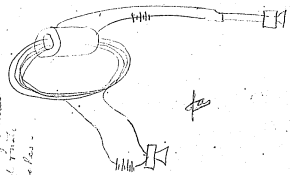
In 17 use small trough and mix as much ignited lampblack as it will hold in suspension -

ditto Electrolyzing Lampblack

ditto ignited Charcoal -

form filo by using single
fibre Ramie or Silk, Shellac.
& successive dips in 17.
~~also~~ also others which only
soften but not melt,
also ignited Charcoal or Lampblack
need to salination in ~~[illegible]~~
also oxides Zircon –
Magnesia – Alumina –
~~Quakcum~~ –

Mix Invoced with 17.

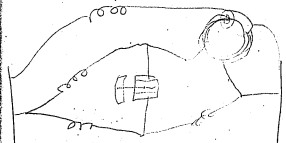


Motion of Magnet
Simple Form of Cradle
and Simple Circuit
in Coil Which
Changes Pole

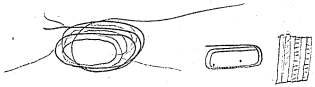
Coil fine wire several coils, telephone in
Ckt. Thus magnetize the end of fine
insulated iron wire say no 20 iron wire
in whose ckt is Carbon telephone + Battery
Electric Current increases + decreases
amount magnetism when sent
through wire, hence induced current
will be sent into Coil + to receiver
perhaps this will be strong +
Thus Great regulation Coil
There is no shortcoming of
lines of force — The more powerful
battery, as on Copper Coil the
better —

J V Z

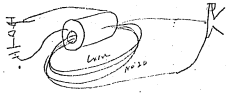
also reverse the operation put Transmitter
on Copper coil with battery use very fine
wire 36 in very + make resistance several
hundred ohms - put receiver on
with resistance battery -
Magnetism increases resistance
of iron wire to Electric Current



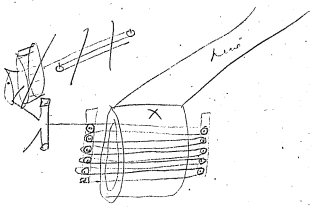
The above principle applied to Wolf motor.



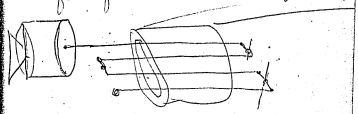
Induction Coil for telephone
Consisting of a ring 2½ inch
dia wound with two 20 + 36
iron wire side by side of possible,
Trans on No 20 - which acting
as an induction coil + magnet
think will get sharp waves

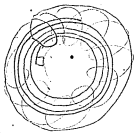


get Molecular Knock of string
Try trans in place Key —

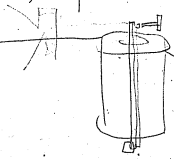


Telephone Receiver magnetism
occurring to ~~Contact~~ 30 or 4
feet of wire wire as Core of X.

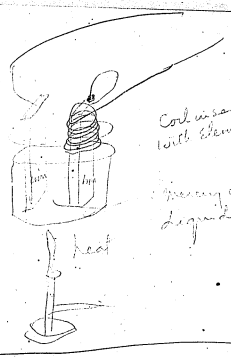




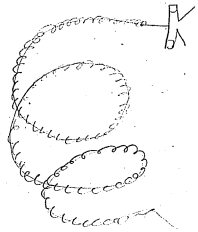
Breguet spiral brass + iron
magnetism tends to shrink
iron hence indicate as
Voltameter or Compensator
also work diaphragm of
Telephone.



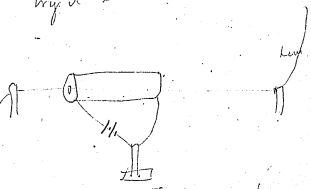
Relay also for telephone
Iron + brass
magnetism



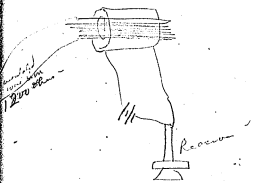
If melted Litharge is conductor
use heat + immerse, Carbon
Electrode or Iron or some other
Electrode not readily oxidized
Try Cu - Ni - C. — also an
Electrode that will alloy with
Lead. or Lead will stick to



150 turns wound round
a No 23 @ 26 iron insulated wire
Knock to work telephone — also
try it stretched —



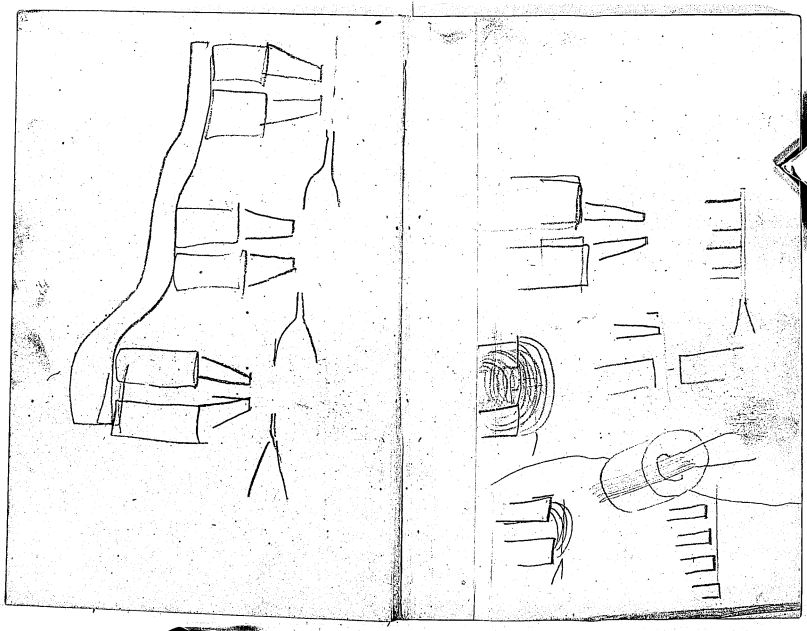
Head of Connect. Tube to Magnetism

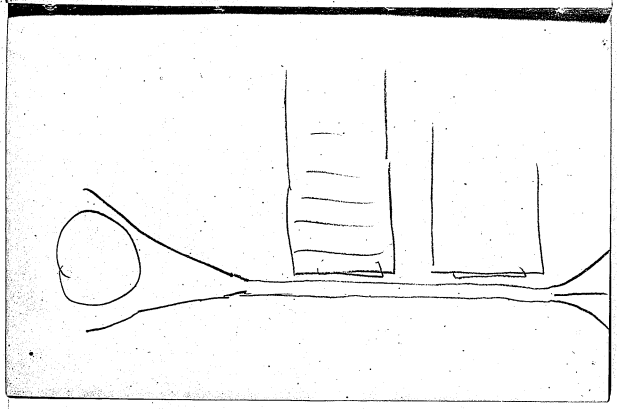


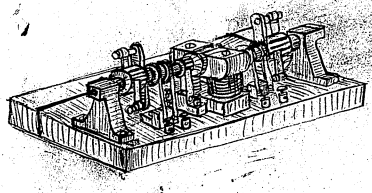
Current from trans heats Cords in core & demagnetizes magnetic coherer throw induced Current in Recorder
Nickel, in, probably be more sensitive

Standard of light in Vac, that point with most wire where it kicks
There might be a standard of Nature for great many things

[THIS BOOK WAS USED IN BOTH DIRECTIONS. THE FOLLOWING PAGES WERE FILMED FROM THE BACK END FORWARD.]







1

A Aubry
Boulevard St Michel 6
Paris France

M Baffe Rue Arago 1 Algier
France

M Baltreck Boulevard Montparnasse
81 Paris France

D Baraban Rue St Honoré
175 Paris France

M Barthélemy Rue Dauphine
16 Paris France

Cyrille Bandet Rue Favart 20 Paris France

Ch Beetz Rue Rochechouart
45 Paris France

Biffault et Biffaudot 8
Rue de la Sorbonne 22 Paris France

E Bisson Boulevard de Strasbourg 9
43 Paris France ✓

J Bizot Aix-en-Provence 10
✓ France

J Bordeau 11
Avenue d'Orleans 29
Paris France

Claude Bourget 14
✓ Rue des Augustins 14
Lyons France

J B Braget
Rue Petit St Jean 38 13
Marseille
✓ France

M Buffe Rue Arago 1 Alger France 14

M Cathelas Rue Vieille du Temple 82 Paris France 15

M Chapuis Rue Grenéta 36 Paris France 16

Charrière et Cie Apprevand Isère France 17

Dr ~~Arthur~~ Chevalier Galerie de Valois 158 Paris France 18

d Collot 19
Boulevard d'Enfer 226 Paris France

B Dehemault 20
Rue Marchienne.
Fontaine l'Evêque
France

M Delamotte 21
Rue de Rivoli 5 Paris France

Vve De Queylar 22
Rue St Jacques 44
Marseille
France

C E Deschiens 23.
Boulevard St Michel 123 Paris France

M Deshayes
Rue de Saintonge 21
Paris France

A P Desmoutis
Platiné Rue Montmartre
Paris France

M Duchemin
Rue Chaperon 25 Paris France

F Dupuis Fils -
Rue Cherchelle 16. Marseille
France

Ch Duterne
Rue Blainville 11 Paris
France

M Dutrou
Boulevard St Germain 94
Paris France

E F Flogny 30
Rue Lemercier 81
Paris France

M Gary 31
Rue Ste Eugénie 22 Paris France

P Gautier 32
Montfort, P Amaury
(Seine-et-Oise)
France

~~Henschel, G~~ 33
Geneste, Herscher et Cie
Rue du Chemin Vert 42 Paris
France

A Gérard 34
Passage Cottin 8
Paris France

Gettliffe et Simon 35
Rue du Turbigo 87 Paris France

M Giesbers 36
Rue de la Bonté 5
Bruxelles

A Goesener 37
Aux d'Avroy 70
Liège, Belgique

Godard et Contenau 38
Rue du Bouloi 7 Paris France

A Goubeaux 39
Rue de Bellechasse Paris 7ème

M Goulancourt 40
Boulevard du Temple 74
Paris France

Em Guérin
Rue Montmorency 5
Paris France

O. Hempel et Cie
Quai des Grands Augustins 55
Paris France

H Isse
Rue Longue des Capucins
Marseille
France

Raoul Jacquemier
Avenue de Neuilly 122 Paris France

M Jacquez
Rue Bertrand 26
Paris France

Kahn et Schumann
Rue Sancry 39 Paris France

Lormenjat
Rue Chauveau-Lagarde 18
Paris France

Lequy et Fils
Rue Monsieur-le-Prince 53
Paris France

Lissante et Cosson
Rue Martel 12
Paris France

Loubaud Fils.
Quai de la Guillotière 27
Lyons
France

M Lutz
Boulevard St Germain 32
Paris France
51

M Mercadier
Rue de Bourgoyne 65
Paris France
52

J Miguel
Cours d'Alsace-Lorraine 110
Bordeaux
France
53

Mines de Cobalt de l'Aragon
Rue Caumartin 28 Paris France
54

J H Minner
Faubourg St Denis
Paris
France
55

V Nodot
Rempart de la Miséricorde 5
Dijon
France

Ch F Noë
Rue Laromiciere 9
Paris France

V. A. Noel
Rue St Denis 163 Paris France

A A ~~Rol~~ Patry
Rue de Bouloi 12
Paris France

M Picart
Rue Mayet 20
Paris France

Royan et fils 1
Boulevard de la Corderie. 13 15 17
Marseille
France

Société Frab de produits chimiques
Rue des Ecoles 42 et 44
Paris France

~~Société Anonyme d'électricité~~
Société de Constr 3
Rue st Florentin 11
Paris France

Stutz et Cie 4
Rue Esquermoise 13
Lille
France

M Thoré
Rue Porte Saint Georges 31
Anvers
France

5

G Tissandier
- Ave de l'Opera 12
Paris France

6

Just Trouvé
Rue Vivienne 14 Paris France

7

M Develay
Mesvres
Saône et Loire
France

8

L Maiche et Cie 9
Rue Louis le Grand 3 Paris France

W A Buss 70
Rue Desaix 1 Paris France

Dr Aron 1
Berlin Germany

Dr E Boettcher
Leipzig Germany

Dopp & Co. 5
New Kolln a/W 16
Berlin
Germany

Schwartz & Co 1
Koch Str. 73
Berlin. Germany

Egger, Kremenezky & Co
Grunethorgasse 19
Vienna Austria

J. Einstein & Co 6
München
Germany

Joh Fraas
München
Germany

Ganz & Co 8
Schwarzenbergplatz 6
Vienna austria

Piette & Krizik
Pilsen
Bohemenia

Sigmund Schuckert
Nürnberg
Germany

M Aleiter
Mainz Germany

M Bischof
Oranienburger Str 75
Berlin Germany

Böhm & Wiedemann
München
Germany

A Bornhardt
Braunschweig
Germany

~~Braun~~
Braun & Hzider 5
Schwarzinplatz 6.
Vienna Austria

Carl Geija 6
Ziegfergasse 27
Vienna Austria

Charles Dölcher
Gumpendorfer Str 6
Vienna Austria

Ch Dold 8
Luxemburg Germany

Wilhelm Eck 9
Wilhelm str 121
Berlin
Germany

Jh Findeisen 90
Jager Str. 75
Berlin Germany

Ch Geiss 1
Brockenheim
Germany

F.O.R. Götze 4
Hartelstrasse 6
Liepzig
Germany

M Hagedorn 3
Ritter str 75
Berlin
Germany

R L Haviland 4
Stross in Himmell 3
Vienna Austria

Josef Jirasko
Margarethenstrasse 36
Vienna Austria

M Krüzer
Symeon Str 20
Berlin Germany

M Kunzemann
Oranien Str
Berlin Germany

J Lotter
Frankfort on the Main
Germany

Mahfer & Eockenbacher
Maximilian Str 11
Vienna austria

George Mayrhofer
Wipplingerstrasse 27
Vienna Austria

Gebr Meer
M-Gladbach
Germany

M Oettel
Schmid str, 31, Berlin Germany

M Peschel
Muller str 3a.
Berlin Germany

M Queva
Breslauer str 3a.
Berlin Germany

Frederic Reiner
Mullerstrasse 48c
München
Germany

C F & W Reinhardt
Rosen Str 29
Berlin Germany

B C Reutlingen
Frankfurt-on-Main
Germany

M Rosenthal
Chaussee Str 113
Berlin Germany

Bernard Schick
Piaristengasse 42
Vienna Austria

Schlag & Bekrend
Alexander Str 70
Berlin
Germany

Ludwig Schuhmeister 11
Lerchengasse 27
Vienna Austria

~~Sendtner~~ 12

Michel Sendtner 13
Schillerstrasse 22
Munchen
Germany

Ferdinand Sifas 14
Operring 19
Vienna Austria

Gebr. Sokoll 15
Plantufer 3
Berlin
Germany

L Stern 16
Essen a/R
Germany

M Trempler 17
Marienwerder Str 35
Berlin Germany

M Voss 18
Paffisadow Str 20
Berlin Germany

Johann Weichmann 19
Mullerstrasse 38
Munchen
Germany

Gebr Weiff 20
Frankfurt-am-Main
Germany

Aug Wipk
Darmstadt
Germany

W Wolters
Karntnerstrasse 30
Vienna Austria

M Zehfe
Schlitzer str 46
Berlin Germany

Stanislaus Zembinski
Madafener Str 14
Vienna Austria

B Egger
Kleine Neugasse 23
Vienna Austria

Mayer & Wolf 6
Van Swietengasse 12
Vienna Austria

Franz Honisch 7
Rossitz Mahren
Germany

Alois Winbauer 8
Theresiengassel
Baden Germany

Jos Bendl 4
Bayern Germany

Gerrabeck & Co 30
Bayern
Germany

Dr Albert Lessing 1
Nürnberg Germany

Zeller & Co
Sonthofen.
Germany

Actiengesellsch Glasfabrik
Spiegel Furth. Baiern
Germany

Bakalowitz & Son
Hoher Market 5
Vienna Austria

Campe & Co
Seydel Str 24
Berlin Germany

J Czeika
Taborstrasse 20
Vienna
austria

Danneleit + Klein
Linden Str 25
Berlin Germany

Glasfabrik-Actiengesellschaft
Goldbach, Floss, Baiern 8
Germany

F Hanauer 9
Baiern Germ

Heubach + Co
Augen Lauscha 1898
Thuringia
Germany

F Lazarowitz
Borhagen bei Berlin
Germ

H C F Muller
Hamburg Germany

M. Oettinger.
Ritter Str 90 -
Berlin Germany

S Reich & Co
Czerningasse 3
Vienna Austria

Dr Reich,
Hallisches Ufer 10
Berlin SW
Germany

Dr Rohrbach
Koniggratzer Str 112
Berlin Germany

Schlag & Behrend 7
Alexanderstr 70
Berlin Germany

Schreiber & Meffen 8
Liechtensteinstrasse 22
Vienna Austria

Stoetzles + Son 9
Freihaus-Hauptstrasse 2
Vienna Austria

Warmbrunn Quilitz & Co 10
Rosenthalerstr 40
Berlin Germany

M J Wilhelm 1
Glasblaserei
Oberweissbach
Thuringia Germany

Winzer + Uhlig
Stallschreiber str 59
Berlin Germany

Fleitmann + Witte
Soerlohn
Germany

M. Clement
Holzgarten str 9
Berlin Germany

R Fuess
Alte Jacob Str 108
Berlin Germany

J G Soerner + Son
Kurs Str 15
Berlin Germany

J Obenaus
Friedrichsgracht 49
Berlin Genny

O. Obenaus Gr
Fischerbrücke 2
Berlin Genny

M Plath
Kanonier St 43
Berlin Genny

J a Schultze
Schmid St 42
Berlin Genny

Gebr Strauss
U d Linden 44
Berlin Genny

A Bockhacker Porzellan Fabk
Berlin Germany

Gebr Bordello
Grunstadt Baiern
Germany

Constantinhutte bei Freiberg
Germany

Th Degenring Katzhutte
Germany

A Dinse Porzellan fabk
Berlin Germany

Driesel Kriesel & Co
Passau
Germany

Chr Fischer 8
Zwickau Germany

Gr Grafner & Co Pulsnitz 9
Germany

Häffmann & Zinkeissen. 170
Zwickau
Germany

Holterhoff & Exner 1
Cöln
Germany

Johann Gattinger
Ostermunchen
Germany

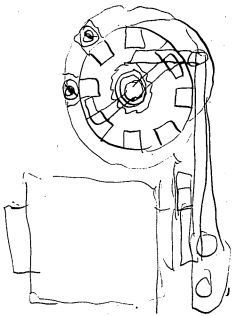
Herman Kolbe 3
Halle. a/S
Germany

Franz Lohner
München
Germany

Stollnreuther + Sohn
Marsstr 32
München
Germany

Bus Somart + Co 6
Magdeburg
germany

Rob Buchholz
Remscheid Germ

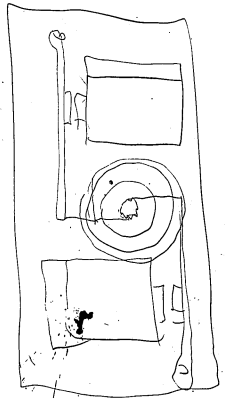


Gebr Heine 8
Offenbach a/M
Germany

Prinz & Blaeke
Altena 9
Germ

Montefiore Levi
Chaussée de Mons 180
45 Brussell
Belgium

A Cruto & Cie
Turin
Italy



L M Ericsson & Co
Stockholm
Sweeden

Zellweger & Ehrenberg 163
Uster
Switzerland